

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1-19 were pending at the time of the outstanding Office Action. Claims 9 and 19 were provisionally withdrawn. Claims 1 and 17 have been amended. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Prior Art Rejections:

Claims 1-3 and 5-8 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,477,132 to Azuma et al. (hereinafter “Azuma”). Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,249,747 to Binnig et al. (hereinafter “Binnig”). Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of U.S. Patent 5,610,898 to Takimoto et al. (hereinafter “Takimoto”). Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of Binnig. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of U.S. Patent 6,702,358 to Hopson et al. (hereinafter “Hopson”). Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig in view of Azuma. These rejections are traversed for at least the reasons given below.

Independent claim 1 recites a “read mechanism used in a contact atomic resolution storage system” that includes “a cantilever disposed with a medium which is movable relative to the cantilever, the cantilever having a probe which extends from the cantilever and which contacts a surface of the medium,” “a pod formed on a side of the cantilever facing the medium, the pod extending toward the media” and “a sensor element formed on the pod so as to juxtapose the medium.”

Specifically, the Office refers to the sensing needle 110, which is formed on the gate electrode that is arranged on the front end of the cantilever main body to teach a probe as claimed. However, it is respectfully submitted that this probe does not extend from the cantilever; rather, the probe technically extends from the gate electrode. Further, the Office

refers to “a gate electrode connected to the sensing needle are arranged on the front end of the cantilever main body” (column 10, lines 7-9) to teach “a pod formed on a side of the cantilever facing the medium, the pod extending toward the medium.” It is respectfully submitted that a pod and a gate electrode are not equivalent features. Rather, the pod is a sensor support extension, as evidenced by further features of independent claim 1, which require that “a sensor element formed on the pod so as to juxtapose the medium.”

Even if the gate electrode were to be taken as a pod, there is no teaching or suggestion in Azuma that there is a sensor element formed thereon. Azuma does teach that the gate electrode is connected to the sensing needle. However, the Office Action construes the sensing needle as the probe of the instant invention. There is no other item or feature of Azuma that is formed on the gate electrode. The Office refers to Figure 4 and column 10, lines 16-28 of Azuma to allegedly teach this feature of a sensor element, pointing specifically to the “field effect transistor (FET) is formed at and near the front end of the cantilever main body, where the sensing needle and the gate electrode operate as a gate while n-type Si regions operate respectively as a drain and source.” Thus, the FET consists of these elements, and is not formed on the gate electrode. Thus, Azuma fails to teach both a probe formed on the cantilever and a sensor element formed on the pod.

The Office Action also refers to a seat 610 of Figure 10 to teach the pod. However, Figure 10 encounters the same problems as Figure 4, and the rest of the disclosure of Azuma. There is no teaching or suggestion of BOTH a probe and a sensor element formed on the pod. Again, on the false assumption that a gate electrode and a pod would be equivalent, the sensing needle formed on the gate electrode is construed as a probe. There is no other element formed on the gate electrode, and thus no teaching of a sensor element as required by claim 1.

Figure 3 of Azuma depicts a plurality of probes formed on a cantilever, which is then described further in detail in Figure 4 (the corresponding description of which is cited above and in the Office Action). There is no indication or teaching that these probes are not identical. In fact, by referring to a plurality of probes with the same reference numeral, it is to be understood that each of the probes are not distinct from each other. Thus, even if more than one probe were present on the cantilever, none of these probes would constitute a pod

as required by the independent claims. Rather, Azuma only teaches the utilization of probes on the cantilever.

It is respectfully submitted that Azuma fails to teach all of the features of the instant invention. If this rejection is maintained, the Office is respectfully requested to point out where these features are taught in Azuma.

The dependent claims are also patentable for at least the same reasons as the independent claims, on which they ultimately depend. In addition, they recite additional patentable features when considered as a whole. As mentioned above, the invention as recited in claim 1 and its dependent claims are deemed to be patentable over the cited references.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of Hopson. Hopson fails to make up for the deficiencies of Azuma as detailed above. Specifically, there is no teaching of both a probe on a cantilever and a pod that contains a sensor element or a sensor pod on the same cantilever. Rather, Hopson is directed towards an enhanced probe. Thus, if this rejection is maintained, the Office is respectfully requested to point out where these features are found in either Azuma or Hopson.

The dependent claims are also patentable for at least the same reasons as the independent claims, on which they ultimately depend. In addition, they recite additional patentable features when considered as a whole. As mentioned above, the invention as recited in claim 11 and its dependent claims are deemed to be patentable over the cited references.

Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Binnig. Binnig fails to teach both a probe and a sensor support extension pod, as required by independent claim 17. Binnig only teaches “a read/write tip orthogonally projecting from the cantilever towards the storage medium.” (column 6, lines 11-12) There is no teaching or suggestion of another sensor utilized on the cantilever, or a sensor support extension pod that would provide support to that other sensor. Thus, if this rejection is maintained, the Office is respectfully requested to point out where these features are found in Binnig.

The dependent claims are also patentable for at least the same reasons as the independent claims, on which they ultimately depend. In addition, they recite additional patentable features when considered as a whole. As mentioned above, the invention as

recited in claim 17 and its dependent claims are deemed to be patentable over the cited references.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable in view of Azuma over Takimoto. Takimoto fails to make up for the deficiencies of Azuma as detailed above. There is no teaching or suggestion in Takimoto of a “read mechanism used in a contact atomic resolution storage system” that includes “a cantilever disposed with a medium which is movable relative to the cantilever, the cantilever having a probe which extends from the cantilever and which contacts a surface of the medium,” “a pod formed on a side of the cantilever facing the medium, the pod extending toward the media” and “a sensor element formed on the pod so as to juxtapose the medium.” Thus, if this rejection is maintained, the Office is respectfully requested to point out where these features are found in Takimoto.

Conclusion:

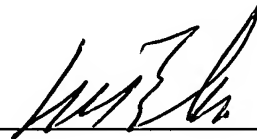
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 C.F.R. § 1.25. Additionally, charge any fees to Deposit Account 08-2025 under 37 C.F.R. § 1.16 through § 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,

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By



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